

FOR PIG ABATTOIR

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FOREWORD

This Code of Veterinary Practice for Pig Abattoir is to provide a guideline for pig abattoir operators for Small and Medium Enterprise (SME), comprising of the aspect of infrastructure facilities and the guide to good veterinary practices in the production of quality and safe meat for human consumption.

This code is the first edition developed by the Department of Veterinary Services Malaysia (DVS).

Datuk Dr. Abdul Aziz bin Jamaluddin

Director General of The Department of Veterinary Services Malaysia 2012

1. OBJECTIVE

The objective of this code is to provide a guideline for the abattoir operators for the production of quality and safe meat for human consumption.

2. SCOPE

This code covers the basic structural components required to build a pig abattoir, the guide to hygiene and sanitation practices and a brief guide for waste management.

3. DEFINITION

3.1 Stunning

The process of rendering animals immobile or unconscious, without killing the animal, prior to their being slaughtered for food.

3.2 Evisceration

The removal of viscera (internal organs, especially those in the abdominal cavity).

4. LOCATION

4.1 The area chosen for location should be reasonably free of objectionable odors, smoke, flying ash, dust and other environmental contaminants.

4.2 The location of the abattoir should take into consideration

the future development in the area so as not to be likely to create a nuisance or public health hazard.

- 4.3 Adequate portable water supply for operation.
- 4.4 Adequate power supply for uninterrupted operation
- 4.5 Entrance to the abattoir should be well maintained so as to create a dust free environment.
- 4.6 Area with a good drainage system.

5. UNLOADING AND HOLDING AREAS

- 5.1 The animal unloading area should be immediately adjacent to the animal holding yard.
- 5.2 The animal unloading area should be on side of the abattoir away from where carcasses are despatched.
- 5.3 An adequate covered or shaded holding area should be provided for animal awaiting slaughter.
- 5.4 The holding areas should be affectively drained to provide proper cleaning of the area.
- 5.5 Adequate drinking water facility should be provided.
- 5.6 Flooring should be designed to prevent animals from slipping.
- 5.7 Unloading ramp, alleyways and raceways should be designed to prevent injuries to animals.

6. BUILDING

- 6.1 The building should be of adequate size for the planned output to accommodate all stages of processing and

storage, and to allow movement of personnel and effective cleaning.

- 6.2 The ruminant abattoir shall include various sections. Clean and dirty areas should be clearly demarcated and separated. Separate areas are required for :
- a) stunning, sticking and bleeding
 - b) scalding
 - c) dehairing
 - d) evisceration
 - e) offal room
 - f) meat inspection area
 - g) chilling, packaging and further cutting
 - h) cold room facility
 - i) utility store
 - j) workers room and facilities

7. STICKING AND PROCESSING CARCASS AREA

7.1 Stunning, Sticking and Bleeding

- 7.1.1 A separate area for stunning, sticking and bleeding should be provided.
- 7.1.2 The stunning, sticking and bleeding areas should be separated from the animal holding area by a wall.
- 7.1.3 Adequate cleaning and sterilizing facilities (Temperature $\geq 82^{\circ}\text{C}$) for sticking knives should be provided.
- 7.1.4 Bleeding area should be of adequate length.

7.2 Scalding and Dehairing Area

- 7.2.1 Facilities for scalding and dehairing should be provided and should always be kept clean before processing.
- 7.2.2 Portable water should be used for scalding and dehairing. Water should be changed for every operation.

7.3 Evisceration area

- 7.3.1 An area for evisceration should be provided.
- 7.3.2 An adequate area well spaced and lit for post-mortem inspection should be provided immediately next to the evisceration area.
- 7.3.3 The eviscerating area must be well ventilated.
- 7.3.4 Adequate hand-wash basins and sterilizers (Temperature $\geq 82^{\circ}\text{C}$) should be provided.
- 7.3.5 Offal containers must be provided.

7.4 Inspection area

- 7.4.1 An adequate area with well spaced and lighting for veterinary inspection should be provided.
- 7.4.2 Inspection facilities should be provided.
- 7.4.3 Labeled containers should be provided for condemned materials.

7.5 Splitting Area

- 7.5.1 The equipment for splitting should be provided.

- 7.5.2 Facilities for cleaning and sterilizing (> 82°C) the splitting equipment must be provided.

7.6 Carcass Final Wash Area

- 7.6.1 Carcass washing facilities may be provided.

7.7 Chiller and Freezer (if available)

- 7.7.1 Chiller and freezer should be well maintained and clean.
- 7.7.2 Chiller temperature should be within 2°C to 4°C.
- 7.7.3 Freezer temperature should be -18°C.
- 7.7.4 The chiller and freezer should be located for easy access to the packaging room.

7.8 Cutting Area (if available)

- 7.8.1 The temperature of the cutting area should be maintained at 12°C.
- 7.8.2 Knife sterilizer should be provided with hot water maintained at 82°C.
- 7.8.3 All facilities provided should not cause cross contamination to the final products.
- 7.8.4 Adequate hand washing facilities should be provided.

8. WORKERS ROOM, UTILITY STORE AND OTHER FACILITIES

- 8.1 Adequate changing rooms for the workers should be equipped with lockers.

- 8.2 Adequate toilets, showers and hand wash basins should be provided.
- 8.3 Storage facilities for equipment and chemicals should be provided.
- 8.4 Staff welfare room/area should be provided.
- 8.5 Veterinary inspector room should be provided.

9. STRUCTURAL COMPONENTS OF PREMISES

9.1 Internal walls

- 9.1.1 Walls should be made of impervious materials.
- 9.1.2 Joints between walls and kerbs should be properly sealed and coved to the floor with a radius of at least 75mm to prevent accumulation of dirt and moisture.

9.2 Floors

- 9.2.1 Floors should be made of impervious materials, relatively smooth, easily cleaned, resistant to wear and corrosion, and non-slip in finish.
- 9.2.2 Floors should be graded to ensure non-stagnation of water.
- 9.2.3 Joints between floors and walls should be properly sealed and coved.

9.3 Ceilings

- 9.3.1 Ceilings at least 3.3metres high should be provided in all

rooms at the processing premises.

- 9.3.2 Ceilings should be so constructed from acceptable materials, smoothly finished and impervious to moisture.

9.4 Windows

- 9.4.1 The building should be preferably be without windows to prevent dust, rodents and birds coming into the processing plant. If windows are inevitable, they should be constructed to avoid accumulation of dirt.
- 9.4.2 Openings should be fitted with removable screens to exclude insects, bird and other pests.
- 9.4.3 Internal window sills should be sloped to prevent their use as shelves and to reduce accumulation of dust.
- 9.4.4 Refuge including bristles, solid waste, bloodetc; should be collected into covered reeptacles and disposed off daily and the receptacles should be washed and disinfected before re-use.
- 9.4.5 Appropriate and well maintained waste treatment system should be incorporated in compliance with the environment quality standard.

9.5 Doors

- 9.5.1 Doors should be self closing and be made of impervious materials and the joints and hinges should be rust resistant.
- 9.5.2 All doors must be tight fitting to prevent rodents, insects and dust.

- 9.5.3 They must have smooth and with non-absorbent surfaces. Polyvinyl chloride (PVC) doors are recommended.

9.6 Overhead Structures

- 9.6.1 All overhead structures and fittings (eg lighting fixtures, pipes for, water, compressed air and power supply, suspension rails, pulleys) should be kept clean.
- 9.6.2 Minimum greasing of overhead structures and fittings is sufficient to prevent contamination of carcasses/ products transported beneath them.

10. HYGIENE AND SANITATION IN THE ABATTOIR

- 10.1 All machinery and equipment used in the abattoir must be design and situated as to be easily accessible for cleaning.
- 10.2 The premises, including the equipment, tables, floor and walls should be kept in a clean, and sanitary condition at all times.
- 10.3 The lairage must also be cleaned and disinfected when necessary.
- 10.4 All equipment that has been in contact with faecal or infected material should be cleaned and sterilized immediately.
- 10.5 Protective clothing should be provided during working hours. Caps, aprons and boots should be cleaned after use. Protective clothing should be of material that is easily cleaned. Disposable materials may be used.

- 10.6 Adequate hand washing facilities shall be provided at all processing areas.
- 10.7 Foot baths should be provided at all entrances to processing area.
- 10.8 Effective supervision and regular inspection throughout the operation is essential to ensure the effectiveness of the cleaning and sanitation process.

11. CONDUCT OF WORKERS

- 11.1 Staff identification should be implemented for all the workers in the abattoir.
- 11.2 Persons who come in contact with meat in the course of their work shall have a medical examination prior to their employment and must be vaccinated for typhoid.
- 11.3 The management should take care to ensure no person, while known or suspected to be suffering from, or to be a carrier of a disease likely to be transmitted through meat or
- 11.4 while inflicted with infected wounds, skin infections, sores or with diarrhea is permitted to work in any food handling area. Any person so affected should immediately report to the management that he/she is ill.
- 11.5 Any behavior which could result in contamination of food, such as eating, smoking, chewing or unhygienic practices such as spitting, should be prohibited in slaughterhouse and meat handling areas.
- 11.6 Training to all workers with the skill in their respective area of responsibilities should be provided.
- 11.7 Workers should be properly attired at all time.

- 11.8 A safe and conducive working environment for all workers should be provided as stipulated under the occupational safety and health regulations.

12. CONDUCT OF VISITORS

- 12.1 Unauthorized person should not be allowed into the premis.
- 12.2 Visitor registration and identification system should be implemented.
- 12.3 Safety of all authorized visitors should be implemented.
- 12.4 Visitors should wear protective clothing.

13. WASTE TREATMENT

- 13.1 The animal unloading area should be constructed so that water are drained into the manure sump.
- 13.2 There must be proper drainage outlets and waste water channeled into the sewage system. Effluent containing solid materials should be directed through a separator for effective retaining of solids prior to discharge of the effluent.
- 13.3 Refuge including solid waste, blood etc; should be collected into covered receptacles and disposed off daily and the receptacles should be washed and disinfected before re-use.
- 13.4 Appropriate and well maintained waste treatment system should be incorporated in compliance with the environment quality standard.

14. GENERAL

- 14.1 Documentation and records related to abattoir and its operation should be provided.
- 14.2 The abattoir should have traceability system in place.
- 14.3 All equipments should be made of stainless steel or impervious materials.
- 14.4 The premises shall be well ventilated, free of odour and adequate lighting should be provided. All light fittings should be covered with protection against shattering.
- 14.5 Effective pest control program shall be implemented and maintained.
- 14.6 All hand wash facilities must be hands-free operated.
- 14.7 No pets or other animals not approved for slaughter shall be kept in the premises.
- 14.8 Pressurized water pump should be provided for washing of floor. The use of hot water is recommended.
- 14.9 No portion of the processing rooms should be used as a living quarters or recreational purposes.
- 14.10 All processing activities after sticking must not be carried out the floor.
- 14.11 All receptacles used for inedibles in the abattoir should be labeled.

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FOR PIG ABATTOIR

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